

Appl. No. 09/608,639
Reply to Office Action of December 3, 2003

Remarks:

Applicants wish to thank the Examiner and the Examiner's supervisor, for discussing the previous rejections in this case by telephone conference on January 20, 2004. As discussed with the Examiners, the above claims are believed to be allowable. Claims 1-23 are in this case. Claims 1 and 11 have been amended to emphasize structure. The additional description regarding structure is supported in the specification at page 4, line 8 to page 5, line 30. The 90 GHz grating bandwidth limitation of claim 11 is found in the examples on pages 7-8. Claim 21 has been amended to depend from now allowable claim 1. Claim 20 is canceled without prejudice and will be presented in a divisional application resulting from the recent restriction. (paper No. 17).

The applicant discloses and claims an optical communication system comprising an external cavity laser. The laser comprises a gain medium comprising an active region. The gain medium also includes an antireflective layer to prevent the laser from lasing off facets of the laser and the active region contains a quantum well to generate light. The quantum well has sides and cladding layers formed on the sides. The laser also has a tapered beam expanding region, optically coupled to the active region, the beam expanding region and being wider than the active region, the beam expanding region shaped to provide lateral broadening and vertical broadening or both. And, the laser has one or more optical guiding layers to guide light from the gain media towards the beam expanding region. The laser has an optical waveguide located adjacent the gain medium such that at least a portion of the electromagnetic energy generated by the active region passes through the beam expanding region and through the antireflective layer into the optical waveguide, and a Bragg grating integral with or coupled to the optical waveguide. The gain medium and the optical waveguide exhibit a coupling efficiency which even without the presence of coupling optics located between the gain medium and

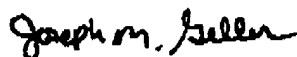
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the optical waveguide is great enough that during laser operation, substantially all optical resonance that occurs is resonance of the cavity defined between said reflective face and said grating. The grating bandwidth is selected such that laser provides a multimode output of at least two modes within the grating bandwidth.

Prior art of record fails to teach or suggest such an external cavity laser as recited in independent claims 1 and 11. Thus, the aforementioned external cavity, is neither anticipated by or obvious in view of the prior art of record.

It is believed that the application now complies with all aspects of 35 U.S.C. §102 and 35 U.S.C. §103 and is in a condition for allowance.

Respectfully submitted,



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